Introduction

In compliance with the Merchant Marine Act of 1936, as amended [1/], the Maritime Administration (MARAD) conducts an annual survey to obtain information from the shipbuilding and ship repair industry to be used primarily to determine if an adequate mobilization base exists for national defense and for use in a national emergency. This report on the 1997 survey of U.S. shipyard facilities was prepared by the Division of Cost Analysis and Production, Office of Ship Construction, and is for general use within the Maritime Administration and other Government agencies.

[1/] Section 210

"It shall be the duty of the Secretary of Transportation to make a survey of the American merchant marine, as it now exists, to determine what additions and replacements are required to carry forward the national policy declared in Section 101 of this Act, and the Secretary of Transportation is directed to study, perfect, and adopt a long-range program for replacements and additions to the American merchant marine so that as soon as practicable the following objectives may be accomplished: ...Fourth, the creation and maintenance of efficient shipbuilding and repair capacity in the United States with adequate numbers of skilled personnel to provide an adequate mobilization base."

Section 211

"The Secretary of Transportation is authorized and directed to investigate, determine, and keep current records of ... (g) The number, location, and efficiency of the shipyards existing on the date of enactment of this Act or thereafter built in the United States;"

Section 502(f)

"The Secretary of Transportation with the advice of and in coordination with the Secretary of the Navy, shall, at least once each year, as required for purposes of this Act, survey the existing privately owned shipyards capable of merchant ship construction, or review available data on such shipyards if deemed adequate, to determine whether their capabilities for merchant ship construction, including facilities and skilled personnel, provide an adequate mobilization base at strategic points for purposes of national defense and national emergency."

The statistical data accumulated by the survey are a major input into the Shipyard Evaluation Analysis System Model (SEAS), a quantitative assessment of the Nation's ship construction and ship repair capability. This capability is periodically compared with Department of Defense scenarios involving various contingency attrition rates and emergency civilian shipping requirements to assess the adequacy of the shipbuilding mobilization base, including ship repair and reactivation of the Maritime Administration reserve fleet and the U.S. Navy reserve fleet.

The survey also provides a database that is used to evaluate the feasibility of proposed shipbuilding programs. Determinations are made as to which existing shipyards might construct proposed ships consistent with ship size and delivery date requirements. The need for construction of new facilities to meet the demands of proposed shipbuilding programs can be also identified. The data gathered by the annual survey also are used extensively in MARAD responses to queries received from a variety of interests, including members of Congress, the Secretary of Transportation, the Department of Defense, the Office of Management and Budget, and other Government agencies.

Each year in late spring, Standard Form 17, "Facilities Available for the Construction or Repair of Ships," is mailed to about 300 U.S. shipbuilding and ship repair facilities. The survey form was developed jointly by MARAD and the Navy. A completed Standard Form 17 represents a detailed description of a shipbuilding or ship repair facility, which is not available from any other source on a continuing and structured basis. The information requested, and available for official use, can be reviewed on a blank Standard Form 17 shown herein as Appendix A. A graving dock characteristics summary and floating drydock characteristics summary are appended to Standard Form 17 to better identify the characteristics of the facilities.

Upon receipt of a completed Standard Form 17 from a shipyard, MARAD forwards a copy to the Naval Sea Systems Command, Industrial Planning, Surveys and Analysis Branch, which maintains records of available facilities and capacities of various shipyards and repair plants. This would enable the Department of Transportation and the Department of Defense to use such facilities to the best advantage in the event of national emergency.

The annual shipyard survey for 1997 has been completed. The information collected has been organized and condensed in the following narratives, exhibits, and tabulations to focus attention on those elements that are most often requested from this office.

GENERAL

A major shipbuilding and repair facility is defined in this report as one that is open and has the capability to construct, drydock, and/or topside repair vessels with a minimum length overall of 122 meters, provided that water depth in the channel to the facility is at least 3.7 meters. Appendix B is a statistical abstract of data gathered from 87 companies responding to MARAD's annual survey which meet these criteria. It lists the facilities sorted on a coastal basis and displays information with respect to the size and type of each building position, drydock, berth space, employment, and remarks regarding principal shipyard activities.

Table 1 has been prepared to answer the frequent question as to the number of shipbuilding positions available to build a complete specified ship. With the exception of the mobilization ship, the ship types listed in Table 1 are those historically delivered to commercial service. Length overall and beam are given for all ships and, in addition, deadweight tonnage is indicated for the bulk carriers. A single shipway or graving dock may have several building positions depending on the size of the ships being constructed. For example, the 365 meter by 59 meter graving dock at Baltimore Marine Industries, Inc. can accommodate one 265,000-dwt tanker or four of the smaller general cargo ships. The total number of building positions varies from 82 for the small cargo ship to 4 for a huge 265,000-dwt tanker. An important consideration that is not addressed in Table 1 is the common shipbuilding practice of laying a keel on a building position already occupied by another ship. For example, in a 213-meter graving dock, a complete 186-meter containership and the stern section of a second ship could be constructed simultaneously. This production procedure maximizes the use of shipbuilding facilities, minimizes the construction period, and increases the number of ships that can be produced in a given period of time. Table 1 addresses only the number of complete ships that can be constructed simultaneously in each building position.

Table 2 is a somewhat different presentation of shipyard capability. In lieu of actual ships, maximum ship length is used to determine the number of shipways or graving docks available. In this tabulation, the emphasis is on the number of individual facilities available and not on the number of ships that can be constructed. Again, using Baltimore Marine Industries, Inc. as an example, Table 2 lists the 365 meter by 59 meter graving dock as one facility regardless of what type of ship is constructed in it. Table 1 indicates that there are six building positions for a ship 145 meter LOA at Baltimore Marine Industries, whereas Table 2 indicates that the yard has three individual building positions capable of constructing a ship about that length. Exhibit 20 is a histogram displaying the reduction in the number of available building positions as the maximum ship length increases.

MAJOR SHIPBUILDING BASE

The Major Shipbuilding Base (MSB), as identified by the Navy and MARAD, is comprised of 18 privately owned U.S. shipyards that are open, having at least one shipbuilding position capable of accommodating a vessel 122 meters in length or over. In addition, these shipyards must own or have in place a long-term lease (1 year or more) on the facility in which they intend to accomplish the shipbuilding work, there must be no dimensional obstructions in the waterway leading to open water (i.e., locks, bridges), and the water depth in the channel to the facility must be a minimum of 3.7 meters.

As of October 1997, the MSB shipyards employed roughly 65 percent of the U.S. shipbuilding and repair industry's total workforce, as reported by the Bureau of Labor Statistics under SIC 3731. At the same time 43 percent of the production workers in these 18 shipyards were engaged in Navy or Coast Guard ship construction and repair work.

As of year's end, 6 of the 18 shipyards were engaged in construction and/or conversion of major combatant and auxiliary ships for the Navy. Three of the yards were engaged primarily in ship construction work provided by the Navy's T-Ship program. Thirteen yards had repair and overhaul work, smaller Navy vessel orders, and non-ship construction work; ten yards were involved with private new construction; and one yard was constructing vessels for the Coast Guard.

Employment projections for production workers are shown by Exhibit 22 of this report. This data was generated by overlaying the Navy's projected six-year shipbuilding and conversion programs onto the estimated work force required to complete the current orderbook.

The following is a brief description of 18 of the major U.S. privately-owned shipbuilding facilities. Exhibits 1 through 18 are general arrangement drawings of each yard's facilities. Exhibit 19 illustrates the geographical location of these shipyards.